



EUROPEAN BIOTECHNOLOGY THEMATIC NETWORK ASSOCIATION



UNIVERSITA DEL SALENTO

# EUROPEAN BIOTECHNOLOGY CONGRESS 2014

Organized by the European Biotechnology Thematic Network Association (EBTNA)

Salento University in Lecce



Impact Factor 3.347

Abstracts will be published in Journal of Biotechnology.

\*All participants of the congress can become a free member of EBTNA for a year.



## Lecce, ITALY



## 15 - 18 May 2014



### Contact Information

D Event Tourism Organization

Dr. Hilal Özcan Cad. Gül Sk. Günyap Park Evleri

C Blok D:2 Ataşehir / İstanbul

Tel: +90 216 573 18 36

Fax: +90 216 573 83 18

[www.eurobiotech0014.eu](http://www.eurobiotech0014.eu)

absRef: 208

**Cyanobacterial strains, isolated from extreme conditions sources of Kazakhstan - producers of biodiesel**

<sup>1</sup>Bolatkhan Zayadan, <sup>1</sup>Fariza Sarsekeyeva, <sup>2</sup>Kirill Mironov,

<sup>1</sup>Aizhan Userbayeva and <sup>2</sup>Dmitry A. Los

<sup>1</sup>Department of Biotechnology, Al-Farabi Kazakh National University, 71, Al-Farabi ave, 050040, Almaty, Kazakhstan, zbolatkhan@mail.ru

<sup>2</sup>Laboratory of Intracellular Regulation, Institute of Plant Physiology, Russian Academy of Sciences, Botanicheskaya street 35, 127276, Moscow, Russia;

ABSTRACT

In recent years a systematic and orderly mastering new cultures of cyanobacteria for further practical use in biotechnology. In this regard, the aim of this work was the isolation, identification and determination of fatty acid composition of new strains of cyanobacteria from extreme conditions sources of Kazakhstan.

Samples were isolated from lake Issyk (13°C), hot spring Turgen (45°C) and salinity lake Balkhash (salinity 4g/l). The standard techniques of cultivation of phototrophic microorganisms were used. Fatty acids were derived using methyl esters and separated by GC-MS Aligent 7890GC.

The results showed that 3 different strains were obtained: sp2 from Issyk, sp1 from Turgen and sp1 from Balkhash. Morphological characteristics and 16S rDNA gene were identified those strains as *Synechococcus elongatus*, *Cyanobacterium aponinum* and *Cyanobacterium stanieri*.

Strain *Synechococcus elongatus* sp.I2 synthesized saturated 26.9% (generally palmitic) and unsaturated 73.1% (oleic, lenoic and lenoleic) FA. In *Cyanobacterium aponinum* sp.T1 strain advantageously synthesized saturated 62.8% (myristic and palmitic) and monoenoic 37.1% (palmitoleic) FA. Cells of strain *Cyanobacterium stanieri* sp.B1 characterized by accumulation mainly of saturated and monounsaturated FA thus dominated myristic (30.1%) and palmitoleic (39.7%) acids. All isolates based on the composition of the FA can be used as producers for the production of biodiesel.